

REMARKS

Applicant's attorney gratefully acknowledges the interview granted by Examiner Chang on December 6, 2007. At that interview, the rejections of the claims under 35 USC §112, first and second paragraphs were discussed. The claims 1 have been revised in light of that interview to eliminate the §112 rejections.

Confirming the representation made during the interview, claim 1 is directed toward the embodiment of the invention including the surface layer or skin layer 9, such as that illustrated in Figure 6. Although the surface layer or skin layer 9 may be removed for example, by buffing (see paragraph [0037]), the specification makes clear that all embodiments of the invention are initially manufactured with the recited surface layer. Accordingly, the rejection of claim 1 under 35 USC § 112, first paragraph, has been obviated by revising claim 1 to specifically recite (1) the structural features of a polishing sheet that includes both a surface layer as well as a polishing layer, (2) that the polishing layer has an approximately uniform distribution of foam cells "in a plane orthogonal to a direction of the thickness of the elastic foam sheet,..." In response to the Examiner's request made during the interview, the exact meaning of this limitation is illustrated in the attached marked-up copy of Figure 6, where "P" stands for "plane".

Support for such language is clearly present in the specification when paragraphs [0005] and [0008] read in conjunction with Figures 1, 4A, 4B, and 5A-D. Paragraph [0005] states that:

Thus, the method disclosed in the JP2001-62704A publication is a method for polishing the material to be polished by retaining a flat face (flatness) of the surface of the skin layer, and which can improve the waviness of the material to be polished. However, since a diameter of the opened relatively large cells changes due to abrasion at the surface of the polishing sheet and polishing performance (waviness of the surface, polishing rate) is gradually lowered, it has a disadvantage in a life span of the polishing sheet. (Emphasis added.)

Paragraph [0008] states that:

Since the polishing layer has the approximately uniform foam structure in the direction of the thickness of the elastic plastic foam sheet by being formed foams whose space volume is larger than that of foams formed at the surface

layer and which are communicated so as to form the network by continuous holes whose diameter is smaller than that of the space volume of the foams formed at the polishing layer, a polishing liquid containing abrasive particles is reserved by the foams which are uniformly formed at the polishing layer and is supplied to a polishing face of the material to be polished through the continuous holes at a time of polishing the material to be polished. Accordingly, the face of the material to be polished is polished uniformly and waviness to the face of the material to be polished can be improved. Further, since the polishing layer is allowed to wear away by polishing and its thickness is larger than that of the surface layer, even if the polishing layer is worn away partially by polishing, the polishing sheet can polish the material to be polished continuously due to the thickness of the polishing layer. (Emphasis added.)

In short, it was the inventor's realization of the problems associated with large cells (and their "trigonal pyramid" shape which results in their variable diameter along the thickness of the polishing layer—see paragraph [0039]) which led to the present invention, which is the provision of a polishing sheet as defined in claim 1 having a polishing layer with foams (1) uniformly distributed along the thickness of the polishing layer with respect to a plane orthogonal to the thickness, and (2) having substantially uniform average diameters (i.e. being devoid of large, pyramid-shaped cells adjacent to the polishing face of the layer that are aligned with the thickness of the polishing layer which cause the average diameter of the foams to increase along the thickness.) Support is clearly present not only in the aforementioned portions of the text of the specification, but in Figures 1, 4A, 4B, and 5A-D. The Examiner should note that while Figures 5C and 5D illustrate polishing pads having large cells 5, that the specification states that the portions of these pads having the large cells 5 are to be cut off and used as an elastic layer in the completed pad (see paragraph [0067]), thus leaving only the portion of the pad having small, uniformly formed foams 3 as the polishing layer. As the invention recited in amended claim 1 is clearly supported by the specification, reconsideration and withdrawal of the rejection under 35 USC §112, 1st paragraph, is requested.

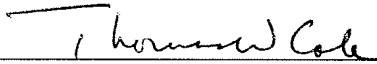
The rejection of claim 1 under § 112, second paragraph, has been obviated by replacing the objected to term "elastic plastic" with "polymeric" in keeping with the suggestion of the Examiner during the interview.

Claim 1 has also been amended on the merits to more clearly define the applicant's invention. Specifically, the last limitation of claim 1 has been revised to recite that "an average diameter of said polishing layer foam cells adjacent to said polishing face remains substantially constant throughout said thickness of said polishing layer," thus distinguishing the invention from prior art polishing pads having variable diameter, trigonal pyramid-shaped large cells in their polishing layers.

Claims 21 and 23 have been revised to render them consistent with amended claim 1. Claims 21 and 23 specifically recite that the average diameter of the polishing layer foam cells is "less than one-third of said thickness of said polishing layer," and "less than half the thickness of said polishing layer," respectively. Support for these claims is clearly present in Figures 1, 4A, 4B, and 5A-D. Now that the Sec. 112 rejections to the claims have been overcome, and the claims have been amended to more clearly distinguish the invention from the prior art, applicants submit that the claims are allowable, and the prompt issuance of a Notice of Allowance is hereby earnestly solicited.

Respectfully submitted,

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